

# NMR Probe Specifications

**Model:** JEOL 5mm 600MHz inverse triple resonance Z-gradient high resolution NMR probe NM-03180HCN

**Description:** Triple resonance inverse high resolution NMR probe fitted with an actively shielded Z-axis gradient for 5mm sample tubes on 600MHz standard bore magnets. The inner coil is tuned to observe  $^1\text{H}$ . The outer coil is tuned to  $^{13}\text{C}$  and  $^{15}\text{N}$ . The probe is fitted with a  $^2\text{H}$  lock. The probe includes one (1) variable temperature compatible sample spinner.

**Specifications:** Signal-to-Noise

|                          |               |                                 |
|--------------------------|---------------|---------------------------------|
| $^1\text{H}$ sensitivity | $\geq 1205:1$ | 0.1% ethyl benzene <sup>†</sup> |
| $^1\text{H}$ sensitivity | $\geq 1050:1$ | 0.1% ethyl benzene <sup>‡</sup> |

Pulse Widths

|                             |                       |            |
|-----------------------------|-----------------------|------------|
| $^1\text{H}$ pulse width    | $\leq 7 \mu\text{s}$  | @30W       |
| $^{13}\text{C}$ pulse width | $\leq 16 \mu\text{s}$ | @200W(Std) |
| $^{13}\text{C}$ pulse width | $\leq 13 \mu\text{s}$ | @300W(HPL) |
| $^{15}\text{N}$ pulse width | $\leq 47 \mu\text{s}$ | @200W(Std) |
| $^{15}\text{N}$ pulse width | $\leq 40 \mu\text{s}$ | @300W(HPL) |

Lineshape

|                                     |                        |                             |
|-------------------------------------|------------------------|-----------------------------|
| $^1\text{H}$ spinning lineshape     | $\leq 6/12 \text{ Hz}$ | 1% chloroform (0.55%/0.11%) |
| $^1\text{H}$ non-spinning lineshape | $\leq 6/12 \text{ Hz}$ | 1% chloroform (0.55%/0.11%) |

Spinning Sidebands (SSB)  $\leq 1\%$

Resolution

|                         |                        |               |
|-------------------------|------------------------|---------------|
| $^1\text{H}$ resolution | $\leq 0.45 \text{ Hz}$ | 1% chloroform |
|-------------------------|------------------------|---------------|

Z-gradient

The probe is fitted with an actively shielded single Z-axis gradient coil capable of 30G/cm with 10A current.

Variable Temperature

Variable temperature range is  $-20^\circ\text{C}$  to  $+100^\circ\text{C}$

<sup>†</sup> Thin wall NMR sample tube, 0.24mm

<sup>‡</sup> Standard wall NMR sample tube, 0.38mm